Clinical implications of the new definition of myocardial infarction (ht21352) References for web only

- 1. World Health Organization Expert Committee. Hypertension and coronary heart disease: classification and criteria for epidemiological studies. Technical Report Series No. 168. Geneva: World Health Organization, 1959.
- 2. Johari V, Davis GK, Hoybook K, *et al.* Retrospective database review for use of cardiac troponin I for detection of myocardial infarction [abstract]. *Clin Chem* 2001;47:A212.
- 3. Tunstall-Pedoe H, Kuulasmaa K, Mahonen M, *et al.* Contribution of trends in survival and coronary-event rates to changes in coronary heart disease mortality: 10-year results from 37 WHO MONICA project populations: monitoring trends and determinants in cardiovascular disease. *Lancet* 1999;**353**:1547–57.
- 4. Tunstall-Pedoe H. Redefinition of myocardial infarction by a consensus dissenter. *J Am Coll Cardiol* 2001;**37**:1472–3.
- 5. Myerburg RJ, Castellanos A. Cardiac arrest and sudden cardiac death. In: Braunwald E, ed. *Heart disease*. 5th ed. Philadelphia: WB Saunders, 1997:742–9.
- 6. Wong CK, White HD. Myocardial infarction: why can't we get the diagnosis right? [editorial]. *Eur Heart J* 2003;**24**:1177–9.
- 7. Lamfers EJP, Hooghoudt TEH, Hertzberger DP, *et al.* Abortion of acute ST segment elevation myocardial infarction after reperfusion: incidence, patients' characteristics, and prognosis. *Heart* 2003;**89**:496–501.
- 8. Wu AH, Apple FS, Gibler WB, *et al.* National Academy of Clinical Biochemistry Standards of Laboratory Practice: recommendations for the use of cardiac markers in coronary artery diseases. *Clin Chem* 1999;**45**:1104–21.
- 9. Panteghini M, Apple FS, Christenson RH, *et al.* Proposals from IFCC Committee on Standardization of Markers of Cardiac Damage (C-SMCD): Recommendations on use of biochemical markers of cardiac damage in acute coronary syndromes. *Scand J Clin Lab Invest* 1999;**230**:103–12.
- 10. Apple FS, Wu AHB. Myocardial infarction redefined: role of cardiac troponin testing [editorial]. *Clin Chem* 2001;47:377–9.
- 11. Kontos MC, Fritz ML, Anderson FP, *et al*. Where do you draw the line? Implications of the new troponin standard on the prevalence of myocardial infarction [abstract]. *Circulation* 2001;**104**(Suppl II):II-709–II-709.
- 12. Gitt AK, Schiele R, Meiser F, *et al.* Myocardial infarction redefined: implication of the new definition of non-ST-elevation myocardial infarction on clinical practice: results of the ACOS-registry [abstract]. *Circulation* 2001;**104**(Suppl II):II-709.
- 13. Hamm CW, Goldmann BU, Heeschen C, *et al*. Emergency room triage of patients with acute chest pain by means of rapid testing for cardiac troponin T or troponin I. *N Engl J Med* 1997;**337**:1648–53.
- 14. Newby LK, Kaplan AL, Granger BB, *et al.* Comparison of cardiac troponin I versus creatine kinase-MB for risk stratification in a chest pain evaluation unit. *Am J Cardiol* 2000;**85**:801–5.
- 15. The GRACE Investigators. Rationale and design of the GRACE (Global Registry of Acute Coronary Events) project: a multinational registry of patients hospitalized with acute coronary syndromes. *Am Heart J* 2001;**141**:190–9.

- 16. Klein W, Buchwald A, Hillis SE, *et al*. Comparison of low-molecular-weight heparin with unfractionated heparin acutely and with placebo for 6 weeks in the management of unstable coronary artery disease: Fragmin in Unstable Coronary Artery Disease Study (FRIC). *Circulation* 1997;**96**:61–8.
- 17. Stubbs P, Collinson P, Moseley D, *et al.* Prospective study of the role of cardiac troponin T in patients admitted with unstable angina. *Br Med J* 1996;**313**:262–4.
- 18. Ohman EM, Armstrong PW, Christenson RH, *et al.* Cardiac troponin T levels for risk stratification in acute myocardial ischemia. *N Engl J Med* 1996;**335**:1333–41.
- 19. Antman EM, Tanasijevic MJ, Thompson B, *et al.* Cardiac-specific troponin I levels to predict the risk of mortality in patients with acute coronary syndromes. *N Engl J Med* 1996;**335**:1342–9.
- 20. Bahit MC, Criger DA, Ohman EM, *et al*. Thresholds for the electrocardiographic change range of biochemical markers of acute myocardial infarction (GUSTO-IIa data). *Am J Cardiol* 2002;**90**:233–7.
- 21. Newby LK, Christenson RH, Ohman EM, *et al.* Value of serial troponin T measures for early and late risk stratification in patients with acute coronary syndromes. *Circulation* 1998;**98**:1853–9.
- 22. Pell ACH, Pell JP. Was it a heart attack? Variations in access to and interpretation of troponin assays are wide [letter]. *Br Med J* 2002;**324**:1216.
- 23. The Hirulog and Early Reperfusion or Occlusion (HERO)-2 Trial Investigators. Thrombin-specific anticoagulation with bivalirudin versus heparin in patients receiving fibrinolytic therapy for acute myocardial infarction: the HERO-2 randomised trial. *Lancet* 2001;**358**:1855–63.
- 24. Perna ER, Macin SM, Parras JI, *et al*. Cardiac troponin T levels are associated with poor short- and long-term prognosis in patients with acute cardiogenic pulmonary edema. *Am Heart J* 2002;**143**:814–20.
- 25. The PURSUIT Trial Investigators. Inhibition of platelet glycoprotein IIb/IIIa with eptifibatide in patients with acute coronary syndromes. *N Engl J Med* 1998;**339**:436–43.
- 26. The Platelet IIb/IIIa Antagonist for the Reduction of Acute Coronary Syndrome Events in a Global Organization Network (PARAGON)-B Investigators. Randomized, placebo-controlled trial of titrated intravenous lamifiban for acute coronary syndromes. *Circulation* 2002;**105**:316–21.
- 27. Califf RM, Abdelmeguid AE, Kuntz RE, *et al.* Myonecrosis after revascularization procedures. *J Am Coll Cardiol* 1998;**31**:241–51.
- 28. Ohman EM, Tardiff BE. Periprocedural cardiac marker elevation after percutaneous coronary artery revascularization: importance and implications [editorial]. *JAMA* 1997;**277**:495–7.
- 29. Tardiff BE, Califf RM, Tcheng JE, *et al.* Clinical outcomes after detection of elevated cardiac enzymes in patients undergoing percutaneous intervention. *J Am Coll Cardiol* 1999;**33**:88–96.
- 30. Harrington RA, Lincoff AM, Califf RM, *et al.* Characteristics and consequences of myocardial infarction after percutaneous coronary intervention: insights from the Coronary Angioplasty Versus Excisional Atherectomy Trial (CAVEAT). *J Am Coll Cardiol* 1995;**25**:1693–9.
- 31. Kong TQJ, Davidson CJ, Meyers SN, *et al.* Prognostic implication of creatine kinase elevation following elective coronary artery interventions. *JAMA* 1997;**277**:461–6.

- 32. Simoons ML, van den Brand M, Lincoff M, *et al*. Minimal myocardial damage during coronary intervention is associated with impaired outcomes. *Eur Heart J* 1999;**20**:1112–9.
- 33. Saucedo JF, Mehran R, Dangas G, *et al*. Long-term clinical events following creatine kinase-myocardial band isoenzyme elevation after successful coronary stenting. *J Am Coll Cardiol* 2000;**35**:1134–41.
- 34. Abizaid AS, Mehran R, Dangas G, *et al*. Positive troponin-I predicts early and late mortality after percutaneous coronary intervention [abstract]. *J Am Coll Cardiol* 2001;**37**(Suppl A):23A.
- 35. Cantor WJ, Newby LK, Christenson RH, et al. Prognostic significance of elevated troponin I after percutaneous coronary intervention. J Am Coll Cardiol 2002;39:1738–44.
- 36. Bertinchant JP, Polge A, Ledermann B, *et al.* Relation of minor cardiac troponin T elevation to late cardiac events after uncomplicated elective successful percutaneous transluminal coronary angioplasty of angina pectoris. *Am J Cardiol* 1999;**84**:51–7.
- 37. Fuchs S, Kornowski R, Mehran R, *et al.* Prognostic value of cardiac troponin I levels following catheter-based coronary intervention. *Am J Card* 2000;**85**:1077–82.
- 38. Genser N, Mair J, Friedrich G, *et al.* Uncomplicated successful percutaneous transluminal coronary angioplasty does not affect cardiac troponin T plasma concentrations. *Am J Card* 1996;**78**:127–8.
- 39. Gruberg L, Fuchs S, Mehran R, *et al.* Prognostic value of cardiac troponin I elevation after percutaneous coronary intervention in patients with chronic renal insufficiency: a 12-month outcome analysis. *Cathet Cardiovasc Interv* 2002;**55**:174–9.
- 40. Hunt AC, Chow SL, Shiu MF, *et al.* Release of creatine kinase-MB and cardiac specific troponin-I following percutaneous transluminal coronary angioplasty. *Eur Heart J* 1991;**12**:690–3.
- 41. Johansen O, Brekke M, Stormme JH, *et al.* Myocardial damage during percutaneous transluminal coronary angioplasty as evidenced by troponin T measurements. *Eur Heart J* 1998;**19**:112–7.
- 42. Karim MA, Shinn M, Oskarsson H, *et al.* Significance of cardiac troponin T release after percutaneous transluminal coronary angioplasty. *Am J Card* 1995;**76**:521–3.
- 43. La Vecchia L, Bedogni F, Finocchi G, *et al*. Troponin T, troponin I and creatine kinase-MB mass after elective coronary stenting. *Coron Artery Dis* 1996;7:535–40.
- 44. Ravkilde J, Nissen H, Mickley H, *et al.* Cardiac troponin T and CK-MB mass release after visually successful percutaneous transluminal coronary angioplasty in stable angina pectoris. *Am Heart J* 1994;**127**:13–20.
- 45. Saadeddin SM, Habbab MA, Sobki SH, *et al.* Minor myocardial injury after elective uncomplicated successful percutaneous transluminal coronary angioplasty with or without stenting: detection by cardiac troponins [abstract]. *J Am Coll Cardiol* 2001;**37**(Suppl A):40A.
- 46. Shyu K, Kuan P, Cheng J, *et al.* Cardiac troponin T, creatine kinase and its isoform release after successful percutaneous transluminal coronary angioplasty with or without stenting. *Am Heart J* 1998;**135**:862–7.
- 47. Sribhen K, Leowattana W, Kiartivich S, *et al.* Cardiac troponin T concentration after coronary balloon angioplasty [letter]. *Am J Card* 1997;**79**:1439.

- 48. Stromme JH, Johansen O, Brekke M, *et al*. Markers of myocardial injury in blood following PTCA: a comparison of CKMB, cardio-specific troponin T and troponin I. *Scand J Clin Lab Invest* 1998;**58**:693–9.
- 49. The CAPTURE Investigators. Randomised placebo-controlled trial of abciximab before and during coronary intervention in refractory unstable angina: the CAPTURE study. *Lancet* 1997;**349**:1429–35.
- 50. The EPIC Investigators. Use of a monoclonal antibody directed against the platelet glycoprotein IIb/IIIa receptor in high-risk coronary angioplasty. *N Engl J Med* 1994;**330**:956–61.
- 51. The EPILOG Investigators. Platelet glycoprotein IIb/IIIa receptor blockade and low-dose heparin during percutaneous coronary revascularization. *N Engl J Med* 1997;**336**:1689–96.
- 52. The IMPACT-II Investigators. Randomised placebo-controlled trial of effect of eptifibatide on complications of percutaneous coronary intervention: IMPACT-II. *Lancet* 1997:**349**:1422–8.
- 53. Webb JG, Carere RG, Virmani R, *et al.* Retrieval and analysis of particulate debris after saphenous vein graft. *J Am Coll Cardiol* 1999;**34**:468–75.
- 54. Mahaffey KW, Roe MT, Sparapani R, *et al*. Cardiac enzyme elevations after coronary artery bypass grafting associated with increased risk of death: results from PARAGON B [abstract]. *J Am Coll Cardiol* 2001;**37**(Suppl A):359A.
- 55. Driscoll A, Hobika J, Etsten B, *et al*. Clinically unrecognized myocardial infarction following surgery. *N Engl J Med* 1961;**264**:633–9.
- 56. Mauney FM, Ebert PA, Sabistan DC. Postoperative myocardial infarction: a study of predisposing factors, diagnosis and mortality in a high-risk group of surgical patients. *Ann Surg* 1970;**172**:497–503.
- 57. Kennedy JW, Kaiser GC, Fisher LD, *et al.* Clinical and angiographic predictors of operative mortality from the collaborative study in coronary artery surgery (CASS). *Circulation* 1981;**63**:793–802.
- 58. Schaff HV, Gersh BJ, Fisher LD, *et al.* Detrimental effect of perioperative myocardial infarction on late survival after coronary artery bypass: report from the coronary artery surgery study CASS. *J Thorac Cardiovasc Surg* 1984;**88**:972–81.
- 59. Klatte K, Chaitman BR, Theroux P, *et al.* Increased mortality after coronary artery bypass grafts surgery is associated with increased levels of postoperative creatine kinase-myocardial ban isoenzyme release: results from the GUARDIAN trial. *J Am Coll Cardiol* 2001;**38**:1070–7.
- 60. Vermes E, Mesguich M, Houel R, *et al.* Cardiac troponon I release after open heart surgery: a marker of myocardial protection? *Ann Thorac Surg* 2000;**70**:2087–90.
- 61. Swaanenburg JCJM, Loef B, Volmer M, *et al.* Creatine kinase MB, troponin I, and troponin T release pattern after coronary artery bypass grafting with or without cardiopulmonary bypass and after aortic and mitral valve surgery. *Clin Chem* 2001;47:584–7.
- 62. Kilger E, Pichler B, Weis F, *et al*. Markers of myocardial ischemia after minimally invasive and conventional coronary operation. *Ann Thorac Surg* 2000;**70**:2023–8.
- 63. Braun SL, Baranaky A, Mazzitelli D. Plasma troponin T and troponin I after minimally invasive coronary artery bypass surgery. *Clin Chem* 2000;**46**:279–81.

- 64. Koh TW, Carr-White GS, DeSouza AC, *et al.* Intraoperative cardiac troponin T release and lactate metabolism during coronary artery surgery: comparison of beating heart with conventional coronary artery surgery with cardiopulmonary bypass. *Heart* 1999;**81**:495–500.
- 65. Krejca M, Skiba J, Szmagala P, *et al.* Cardiac troponin T release during coronary surgery using intermittent cross-clamp with fibrillation, on-pump and off-pump beating heart. *Eur J Cardiothorac Surg* 1999;**16**:337–41.
- 66. Birdi I, Caputo M, Hutter JA, *et al.* Troponin I release during minimally invasive coronary artery surgery. *Thorac Cardiovasc Surg* 1997;**114**:509–10.
- 67. Koh TW, Hooper J, Kemp M, *et al*. Intraoperative release of troponin T in coronary venous and arterial blood and its relation to recovery of left ventricular function and oxidative metabolism following coronary artery surgery. *Heart* 1998;**80**:341–8.
- 68. Eigel P, van Ingen G, Wasgenpfeil S. Predictive valve of perioperative cardiac troponin I for adverse outcome in coronary artery bypass surgery. *Eur J Cardiothorac Surg* 2001;**20**:544–9.
- 69. Carrier M, Pellerin M., Perrault L, *et al*. Troponin levels in patients with myocardial infarction after coronary artery bypass grafting. *Ann Thorac Surg* 2000;**69**:435–40.
- 70. Sadony V, Korber M, Albes G, *et al.* Cardiac troponin I plasma levels for diagnosis and quantitation of perioperative myocardial damage in patients undergoing coronary artery bypass surgery. *Eur J Cardiothorac Surg* 1998;**13**:57–65.
- 71. Barron JT. Cardiac troponin I and non Q-wave myocardial infarction: how useful is it after coronary artery bypass surgery? *Crit Care Med* 1998;**26**:1936–7.
- 72. Bonnefoy E, Filley S, Kirkorian G, *et al.* Troponin I, troponin T, or creatine kinase-MB to detect perioperative myocardial damage after coronary artery bypass surgery. *Chest* 1998;**114**:482–6.
- 73. Gensini GF, Fusi C, Conti AA, *et al*. Cardiac troponin I and Q-wave perioperative myocardial infarction after coronary bypass surgery. *Crit Care Med* 1998;**26**:1986–90.
- 74. Horvath KA, Parker MA, Frederiksen JW, *et al.* Postoperative troponin I values: insult or injury? *Clin Cardiol* 2000;**23**:731–3.
- 75. Jacquet L, Noirhomme P, El Khoury G, *et al*. Cardiac troponin I as an early marker of myocardial damage after coronary bypass surgery. *Eur J Cardiothorac Surg* 1998;**13**:378–84.
- 76. Alyanakian MA, Dehoux M, Chastel D, *et al.* Cardiac troponin I in diagnosis of perioperative myocardial infarction after cardiac surgery. *J Card Vasc Anesth* 1998;**12**:288–94.
- 77. Etievent JP, Chocron S, Toubin G, et al. Use of cardiac troponin I as a marker of perioperative myocardial ischemia. Ann Thorac Surg 1995;**59**:1192–4.
- 78. Newby LK, Ohman EM, Christenson RH, *et al.* Benefit of glycoprotein IIb/IIIa inhibition in patients with acute coronary syndromes and troponin T-positive status: the PARAGON-B troponin T substudy. *Circulation* 2001;**103**:2891–6.
- 79. The Platelet Receptor Inhibition in Ischemic Syndrome Management in Patients Limited by Unstable Signs and Symptoms (PRISM-Plus) Study Investigators. Inhibition of the platelet glycoprotein IIb/IIIa receptor with tirofiban in unstable angina and non-Qwave myocardial infarction. *N Engl J Med* 1998;**338**:1488–97.

- 80. The Platelet Receptor Inhibition in Ischemic Syndrome Management (PRISM) Study Investigators. A comparison of aspirin plus tirofiban with aspirin plus heparin for unstable angina. *N Engl J Med* 1998;**338**:1498–505.
- 81. The Global Use of Strategies to Open Occluded Coronary Arteries in Acute Coronary Syndromes (GUSTO IIb) Angioplasty Substudy Investigators. A clinical trial comparing primary coronary angioplasty with tissue plasminogen activator for acute myocardial infarction. *N Engl J Med* 1997;**336**:1621–8.
- 82. Cohen M, Demers C, Gurfinkel EP, *et al*. A comparison of low-molecular-weight heparin with unfractionated heparin for unstable coronary artery disease. *N Engl J Med* 1997;**337**:447–52.
- 83. Wallentin L, Lagerqvist B, Husted S, *et al*. Outcome at 1 year after an invasive compared with a non-invasive strategy in unstable coronary-artery disease: the FRISC II invasive randomised trial. *Lancet* 2000;**356**:9–16.